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Factors That Affect Short-Term Commercial Bank Lending to Developing Countries

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A preliminary look at factors that affect the flow of short-term commercial bank loans to developing countries.

This paper — a product of the Financial Advisory Service Unit, Office of the Vice President, Cofinancing and Financial Advisory Services — is part of a larger Bank effort to understand the attributes of alternative types of financial flows to developing countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lourdes Dionne, room Q5-127, extension 31426 (April 1992, 41 pages).

Developing countries rely on short-term trade credits for imports of several essential consumer goods, including medicines and basic food supplies. The credits also facilitate export-related transactions.

The mechanisms commercial banks use to provide trade credits to developing countries are complex and costly. Even a temporary break in the flow of short-term credit can seriously hurt a country's business. But since short-term trade credits can be structured so that they involve few risks to a bank and at the same time are very costly to the debtor, they are generally the last forms of credit to be cut and the first to be reestablished in debt-distressed developing countries.

To gauge the likelihood of continued short-term trade-related financial flows to developing countries, Gooptu and Peria examined the factors that affect such short-term commercial bank loans. Little literature was available on the subject. Only recently have relevant data become available, and further analysis would be facilitated by more useful disaggregation of the data that are made available.

Gooptu and Peria studied relevant data over time for seven countries for which data were

available: Argentina, Brazil, Egypt, India, Kenya, Mexico, and Turkey. They found that:

- Countries with greater growth prospects (higher investment-to-GNP ratios) get more short-term credit.
- Short-term credits are usually meant to finance countries with significant trade deficits.
- Higher levels of external indebtedness (as a ratio of total debt outstanding to GNP) are generally coupled with higher levels of short-term external indebtedness to commercial banks (a high ratio of short-term debt to GNP).
- Country-specific factors affect the volume of short-term lending available to a country. If all else is equal, some countries (such as Kenya) find it harder to get short-term commercial bank financing than others (such as Mexico). Further analysis is needed to determine which factors account for these differences, but possibilities to be explored include a country's track record in implementing World Bank/IMF structural adjustment programs; the existence of domestic financial markets; and orderly resolution of the country's external debt burden in line with a thoughtful strategy for managing external debt.

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I. Introduction

Developing countries rely on short-term trade credits for several essential consumer goods imports, such as medicines and basic food supplies. They are also vital in facilitating transactions related to the country's exports. The mechanisms adopted in the provision of trade credits from commercial banks to developing countries are often very complex and costly for borrowers in developing countries. A break in the flow of short term trade lines, even a temporary one, could have severe adverse implications on the business of trade in the developing countries. Given that short-term trade credits can easily be structured such that they involve few risks for the banks while being extremely costly to the debtor, they are generally the last forms of credit to be cut and the first to be re-established in debt-distressed developing countries.¹ In an endeavor to gauge the likelihood of future short term trade-related financial flows from commercial banks to developing countries, the objective of this paper is to examine the determinants of short term lending by commercial banks to the less developed countries (LDCs).

Literature on this subject as well as reliable data for LDCs is scarce, partly due to the fact that countries were not required, until recently, to report detailed information on their short term obligations to commercial banks by the reporting agencies (such as the World Bank's Debtor Reporting System). Available information was sketchy and often too aggregate to allow for any meaningful

¹ See Gooptu and Brun (1991) for details on the different types of instruments used in the provision of short term trade lines from commercial banks to the less-developed countries.

analysis. Even though these factors have made our task difficult, the availability of more recent data on a few LDCs have made it worthwhile to embark on a more rigorous analysis of the determinants of short term commercial bank lending to developing countries.

In this paper, the factors that significantly affect short-term lending by banks to seven LDCs, namely, Argentina, Brazil, Egypt, India, Kenya, Mexico and Turkey, are examined in an endeavor to determine whether these have changed over time and across countries. We begin with a brief discussion on the trends in lending to LDCs from private creditors, in general, in Section II of the paper, and focus on the behavior of short-term commercial bank lending to LDCs, in particular, in Section III of the paper. The circumstances in the seven countries that have been selected for this study are highlighted in this context. Alternative hypotheses on the possible determinants of short-term commercial bank lending to LDCs are postulated in Section IV. These hypotheses have been formulated on the basis of our findings from numerous interviews with market participants in financial institutions and officials in the central banks of certain LDCs. The results of the econometric analysis using pooled cross-section and time series data for our sample of countries are provided in Section V of the paper. The basic conclusions and recommendations for areas of further analysis in this context are provided in Section VI. A discussion on the alternative sources and definitions of the data used and a list of variables used in our econometric analysis of short-term credits is provided in Appendix 1.

II. Overview of Trends in Lending to LDCs

When speaking of the sources of external financing to less developed countries (LDCs), history has been known to repeat itself. The situation in the

nineties mimics that of the sixties, when official creditors played a dominant role in this area. Before 1970, more than 50% of the medium and long term (MLT) external debt of developing countries was owed to official creditors while commercial bank debt and bonds accounted for about 32% and 5% respectively.² In the 1970s and early 1980s, financing from private creditors in the form of direct syndicated lending (as opposed to equity participation) to developing countries increased dramatically as the market for international bank credit gained a competitive advantage over the securities markets in channeling the surpluses of oil exporting countries toward LDCs. By 1982, the pre-1970 situation was reversed with commercial banks holding 50% of the MLT external debt of LDCs, while official creditors held 35% of the debt.³

After 1982, against a background of high interest rates and deteriorating terms of trade combined with inappropriate policies and drastic cut-backs in new lending by commercial banks, a number of LDC borrowers underwent debt servicing problems and were forced to enter into repeated debt rescheduling agreements and concerted new money exercises. In total, medium and long term commitments from commercial banks to developing countries fell from \$42 billion in 1982 to an average of \$14 billion per annum between 1983-88. By 1988 the share of commercial banks in long term external debt for developing countries as a whole⁴ had fallen to around 40%.

The fall in volume of syndicated loans to LDCs reflects the determination of international banks to reduce their exposure to developing countries, not only through drastic reductions in the pace of lending but also through various

² International Capital Markets. Development and Prospects. May 1991. IMF Publications.

³ *ibid*

⁴ *ibid*

innovative market related financial engineering techniques such as debt conversion schemes. To a large extent, the banks increasing concern with exposure levels has stemmed from the pressure exerted on them by the terms of the Basle Agreement of July 1988. This agreement addresses the principles concerning the international convergence of capital measurement and capital standards in the financial institutions of the Group of Ten nations. These principles set target figures for the ratio of capital to a risk-weighted sum of assets and off-balance sheet exposure, culminating in a level of 8% by 1992.⁵ Many of the major banks need to increase their capital in order to meet the targets. Ways of achieving such increases include higher profits and new issues of equity, neither of which is compatible with new lending to LDCs.

The curtailment of new bank lending to LDCs has increased the role of official creditors in the international capital market arena. Official debt including the use of IMF credit now accounts for about 46% of the debt of LDCs compared with 32% in 1984.⁶ At the same time, the critical debt situation and the highly unfavorable impact of the "debt overhang" on the economic performance and living standards in developing countries has given fresh impetus to alternative approaches to solving the debt problem. Prominent among these proposals was the provision of debt relief through the reduction in the stock of debt or in debt service payments. These were the central features of the initiative launched by the United States Secretary of the Treasury - Nicholas Brady in March 1989. The most important debt restructuring schemes implemented under the auspices of "Brady Initiative" were

⁵ United Nations Conference on Trade and Development. Trade and Development Report, 1989. United Nations Publications.

⁶ World Debt Tables 1990-91. External Debt of Developing Countries. Volume 1. World Bank Publications.

those of the Philippines, Mexico and Costa Rica, which reduced the stock of commercial bank debt for the three countries taken together by \$9.5 billion.⁷

A notable feature of recent agreements is the paucity of new concerted lending by private creditors to LDCs. Banks have responded to the pressure on them to supply resources by searching for alternatives to new money, a search that gave rise to a variety of instruments tuned to the specific interests and constraints of commercial banks, such as debt conversions, exchange offers with or without collateralization, debt buy-backs and exit instruments.

In particular, debt conversion operations have become very important recently, especially in conjunction with ongoing privatization programmes, and may be expected to continue to be strong for several countries in the period ahead. Debt equity conversion provisions have become important components of recent bank financing packages as a result of accelerated efforts by LDC governments to attract foreign investors. The Argentinean government, for example, has sharply stepped up the pace of debt-equity conversions as it seeks to privatize and re-capitalize the country's state-owned enterprises.⁸ Recent debt conversions in the Philippines were also largely associated with privatization operations under debt-for-assets schemes. The sectors eligible for investment under the scheme included bank privatizations and export, energy and agricultural ventures. Such debt-conversion schemes are also gaining importance in Africa and Eastern Europe as well.

⁷ World Debt Tables 1990-91. External Debt of Developing Countries. Volume 1. World Bank Publications.

⁸ ENTEL (the state telephone company) was sold for a total of \$214 million in cash and \$5.03 billion in Argentine foreign debt.

Finally, the increased use of market based debt reduction instruments has been facilitated by and, in turn, contributed to a marked growth in the importance of the secondary market for the external debt of developing countries. The volume of nominal claims traded on the secondary market is estimated to have reached around \$70 billion in 1990 from around \$60 billion in 1989.⁹ Banks seeking to restructure their portfolios to reduce their exposure levels account for much of the market's volume. However, non-bank institutional investors, motivated by perceived high yields, are also becoming very active in the secondary market for LDC debt.

III. The Evolution of Short-Term Lending to LDCs.

The decline in syndicated lending by commercial banks to developing countries and the efforts of the countries themselves to tackle their debt overhang problem via debt reduction and debt conversion schemes is a phenomenon which has been widely covered in the recent literature (e.g. see Sachs (1989)). On the other hand, very few studies have analyzed the market for short-term bank lending to LDCs. The role of short-term trade credit continues to be important to LDCs, even though the volume of MLT financing from private creditors is on the decline. There are a variety of instruments, with varying degrees of complexity, that are being used by banks to provide short-term credits to LDCs. Apart from the traditional letters of credit, creative new instruments have been developed to finance LDC trade.¹⁰ Moreover, the "bundling" and "securitization" of short-term

⁹ Source: "International Capital Markets: Development and Prospects. May 1991. IMF Publication.

¹⁰ Brun, Richard and Gooptu, Sudarshan. "The Role and Cost of Short-Term Trade Credits" in John D. Shilling (ed.) Beyond Syndicated Loans, World Bank Technical Paper No. 163, 1992.

loans has allowed banks to stay in the trade financing business without considerably increasing their exposure.¹¹ As a result of the increasing dynamism and sophistication of the market for short-term finance, commercial banks' short-term claims on major non-industrial borrowers have increased from about \$75 billion at the end of 1978 to about \$185 billion at the end of 1990.¹² The increasing importance of short term commercial bank lending to the heavily indebted developing countries is also observed in the case of export credits that are insured by creditor governments or their agencies (which may fall under the auspices of the Paris Club in the case of credits from OECD creditors). Generally, short term insured credits have not been included in Paris Club reschedulings. This has motivated banks to extend insured short term loans to developing countries, which are subsequently rolled over, to finance investment projects (which should typically be financed by medium and long-term loans). In this way banks can reduce the risk of having to reschedule their insured credits to developing countries at the Paris Club.

The purpose of this paper is to discover some of the unknowns in the short-term lending equation. This study will concentrate on the factors that significantly affect short-term lending by banks to LDCs in an endeavor to determine whether these have changed over time and across countries. For this purpose, a sample of seven countries was selected, namely, Argentina, Brazil, Egypt, India, Kenya, Mexico and Turkey. This sample was chosen partly because it provides a wide geographical

¹¹ In March 1990, the US Eximbank introduced the "Bundling" program for insured export credits provided by commercial banks to LDCs. Under this program, a commercial bank is permitted to bundle many small and diverse loans to the private sector in LDCs into one large transaction which, in turn, the Eximbank guarantees.

"Securitization", which has been prevalent in the context of medium and long-term debt restructurings for several years, is now being used more actively as a way of restructuring the short term external debt of developing countries.

¹² Source: Institute of International Finance, Washington, D.C. It should be noted that these are in terms of current prices and, therefore, have not been adjusted for inflation.

coverage and, above all, because it is a heterogeneous sample of countries in terms of their growth and external debt experiences.

Argentina, Brazil and Mexico were important beneficiaries of the enormous flows of syndicated loans to LDCs during the late 1970s which resulted from the need to recycle the growing stock of petro-dollars in the international capital markets. After a period of overvaluation of their domestic currencies and rising domestic interest rates, all three countries experienced debt servicing problems and had to reschedule their debts. Moreover, both Mexico and Brazil declared a moratorium on their debt on 1982 and 1987 respectively. In the last month of 1982, the Mexican government reached an agreement with the commercial bank creditors in which they agreed to reschedule \$23 billion of claims due in 1982-84 and to provide \$5 billion in new money.¹³ In the case of Brazil, in 1988 the banks agreed to reschedule \$61.5 billion of their claims over 20 years and to provide further loans of \$5.2 billion.¹⁴ In the last few years, these three countries have looked for ways to reduce their debt overhang and improve their economic performance. While Mexico and Argentina have proved considerably successful, Brazil has still got a long way to go.

Turkey was one of the first countries whose commercial bank debt restructuring agreement was negotiated with the participation of a third party - the International Monetary Fund. Reschedulings amounting to \$9.6 billion

¹³ The Economist Intelligence Unit. MEXICO Country Profile. Annual Survey of Political and Economic Background 1991-92.

¹⁴ The Economist Intelligence Unit. BRAZIL Country Profile. Annual Survey of Political and Economic Background 1991-92

were concluded during 1978-82.¹⁵ Since then Turkey's major debt indicators have improved significantly, contributing to the international community's increased confidence in the credit-worthiness of Turkey. The debt to GDP ratio has fallen from a peak of 60% in 1987 to 42% in 1990,¹⁶ reflecting both the recent rapid income growth and appreciation of the Turkish lira. Turkey's total debt to export ratio has declined steadily from over 330 percent in 1980 to 247 percent in 1987 and to 178 percent in 1990.¹⁷ Moreover, Turkey's access to the commercial markets has improved significantly, with full repayment of both the IMF and the previously rescheduled commercial bank debt service obligations, accompanied by the significant build-up of reserves in 1989.

Egypt has been, for the most part, unsuccessful in avoiding repeated reschedulings and debt servicing problems. By 1990, with an external debt of some \$50 billion, Egypt has become one of the developing world's largest debtors.¹⁸ Most of this debt has not been contracted from commercial banks, but is debt on concessionary terms, consisting of development loans from governments and international institutions or trade credits (for the most part guaranteed by official export credit agencies). Annual repayment obligations amount to \$4-5 billion.¹⁹ Egypt's commercial bank debt is estimated at \$1.5 billion, including publicly guaranteed long-term debt of \$389 million.²⁰ In 1990, several projects for debt conversion (usually in conjunction with privatizations) have been undertaken by the Egyptian government in order to

¹⁵ The World Bank

¹⁶ *ibid*

¹⁷ *ibid*

¹⁸ The Economist Intelligence Unit., "EGYPT Country Profile," Annual Survey of Political and Economic Background, 1991-92.

¹⁹ The World Bank

²⁰ *ibid*

reduce the negative impact that the debt problem has had on the Egyptian economy. The results of these measures, remain to be seen.

For the most part, India has relied on multilateral donors to finance the development plans introduced by the Indian government. However, of late, India's foreign debt has grown significantly relative to its repayment capacity. In particular, commercial borrowing has increased, partly as a consequence of the inability of the official creditors to fulfill India's growing need for external financing on concessional terms. The total debt was estimated by the Indian Government to be around \$57 billion as of end-1990.²¹ Debt service has been close to \$6 billion in the last few years, which has meant a debt service ratio (including short-term debt) of close to 30%.²²

Kenya is still relatively favoured by foreign aid agencies, and its receipts of official development assistance (ODA) have held up well, reaching \$866 million in 1988 and an unconfirmed figure of nearly \$1 billion in 1989.²³ Inflows of aid funds have supported Kenya's public capital spending and its balance of payments deficit for so long that Kenya is described as experiencing a situation of "aid led growth." Besides the aid provided by the U.S.A. and Japan, during 1988 and 1989, aid agreements were concluded with Belgium, Denmark, Finland, South Korea and China. At the end of 1988, Kenya's total disbursed external debt was \$5.9 billion, of which \$331 million was short-term, \$572 million outstanding to the IMF, \$744 million private non-

²¹ The Economist Intelligence Unit, "INDIA Country Profile," Annual Survey of Political and Economic Background, 1991-92.

²² *ibid*

²³ The Economist Intelligence Unit, "KENYA Country Profile," Annual Survey of Political and Economic Background, 1991-92.

guaranteed and the remaining \$4241 million is publicly guaranteed.²⁴ As a result of debt forgiveness from different donors, Kenya's debt service has fallen from \$696 million in 1986 to \$594 million in 1989.²⁵ The total debt service has declined over the past two years, from 38.7% of exports of goods and services to 29.6% in 1989.²⁶ Moreover, the terms of lending to Kenya have softened over recent years, with average interest rate on new public and publicly guaranteed borrowing falling from 5.1% in 1983 to 1.9% in 1988. Kenya's external debt at the end of 1989 stood at \$5.7 billion.

Table 1 shows the amounts of short-term indebtedness of seven countries in our sample the period 1980-1990 (in billions of US dollars).²⁷ The table shows the amount of uninsured debt outstanding and disbursed from commercial banks in BIS reporting countries to the private and public sectors of the selected developing countries having an original maturity of one year or less²⁸. Mexico, Brazil and Argentina have been the largest borrowers of short-term money, each of them with over \$5 billion of short-term debt stock every year, followed by Turkey which only surpassed this figure in 1990. In the remaining countries, although short-term debt has almost systematically increased, the figures are not very significant in absolute terms.

²⁴ *ibid*

²⁵ *ibid*

²⁶ *ibid*

²⁷ Source BIS. The Maturity and Sectoral Distribution of International Bank Lending. (1979-1990)

²⁸ Raw data has been adjusted for loans with original maturities of greater than one year which will be fully amortized in less than one year. BIS statistics include these maturing loans with those having original maturities of less than one year when reporting estimates of short-term lending by banks to LDCs.

TABLE 1: Evolution of Short-term Credits to Selected Countries
(US\$ Billions)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	Average 1980-90	Standard Deviation
Argentina	9.3	10.0	11.0	12.6	12.1	13.0	7.5	7.7	6.5	5.2	6.4	9.2	2.7
Brazil	12.2	14.2	16.9	13.4	12.6	15.9	19.1	21.7	19.1	18.5	17.7	16.5	3.1
Egypt	2.0	2.8	3.1	3.4	3.3	3.1	2.5	2.6	2.0	2.3	2.2	2.7	0.5
India	0.4	0.6	0.9	1.0	1.1	1.5	2.2	2.4	2.2	2.6	3.6	1.7	1.0
Kenya	0.3	0.2	0.1	0.2	0.2	0.3	0.2	0.4	0.3	0.4	0.7	0.3	0.2
Mexico	15.5	24.2	25.2	24.9	11.7	14.3	9.0	10.8	9.1	11.2	15.7	15.6	6.3
Turkey	1.0	0.8	0.6	1.0	1.7	2.9	3.8	5.1	3.6	4.1	7.1	2.9	2.1

Source: Bank for International Settlements, "The Maturity and Sectoral Distribution of International Bank Lending", various issues (1979-90)

TABLE 2: Ratio of Short-term debt to GNP

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	Average 1980-90	Standard Deviation
Argentina	16.6%	17.8%	21.1%	21.3%	16.7%	21.5%	10.1%	10.0%	7.4%	9.6%	6.4%	14.4%	5.8%
Brazil	5.4%	5.6%	6.3%	7.0%	6.4%	7.5%	7.4%	7.7%	6.1%	4.3%	3.8%	6.1%	1.3%
Egypt	9.1%	13.1%	13.0%	13.1%	11.5%	10.0%	7.8%	8.1%	7.2%	7.4%	7.0%	9.8%	2.5%
India	0.2%	0.3%	0.5%	0.5%	0.6%	0.7%	1.0%	0.9%	0.8%	1.0%	1.3%	0.7%	0.3%
Kenya	4.0%	3.1%	2.1%	4.1%	3.8%	4.5%	2.4%	4.9%	4.1%	5.4%	8.7%	4.3%	1.8%
Mexico	8.2%	10.1%	15.6%	17.9%	7.1%	8.2%	7.4%	8.1%	5.4%	5.5%	6.8%	9.1%	4.0%
Turkey	1.7%	1.4%	1.1%	2.0%	3.5%	5.7%	6.7%	7.7%	5.3%	5.3%	6.6%	4.3%	2.4%

Source: World Bank, DRS and Bank for International Settlements, "Maturity and Sectoral Distribution of International Lending", various issues (1979-90).

FIGURE 1: Ratio of Short-term Debt to GNP, 1980-90.
Selected Countries

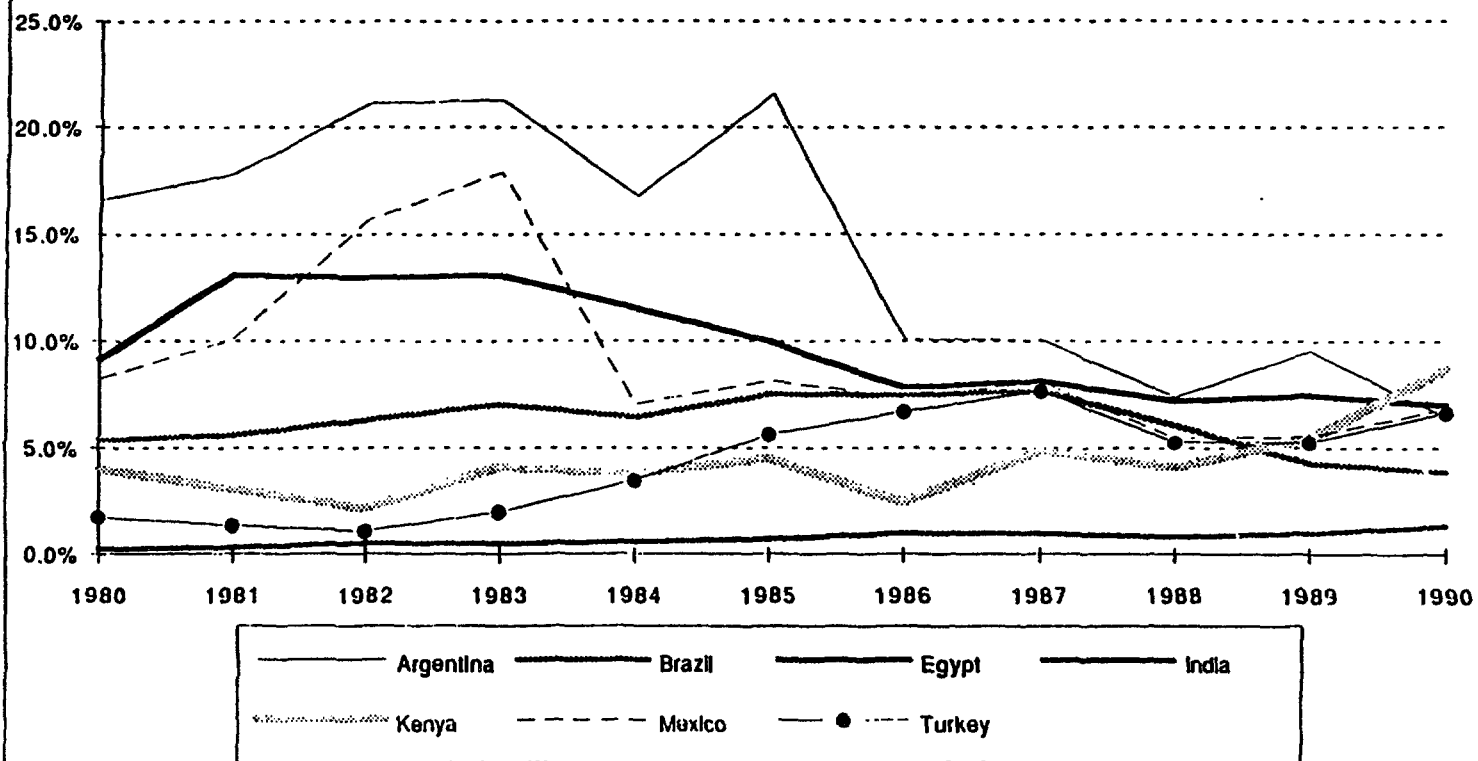


Table 2 and figure 1 show the ratio of short term debt to GNP. This ratio provides an estimate of the magnitude of short-term debt relative to the size of the economy. Once the short-term debt figures have been normalized in this way to take into account the differences in the size of the countries' economies under consideration, it provides a measure for cross-country comparisons of the behavior of short-term debt across time.

Argentina is clearly the country with the highest short-term debt to GNP ratio, although this fraction has fallen drastically from over 20% in 1985 to 6% in 1990. Mexico's short-term debt to GNP ratio has also fallen considerably, although, in the Mexican case, the sharp reduction occurs between 1983-84, (immediately after Mexico's default on its long-term debt). When this ratio fell from 18% in 1983 to 7% in 1984. Brazil follows very similar patterns to Argentina and Mexico with a noticeable drop in the ratio in 1983 and again in 1987 and a declining trend thereafter. However, Brazil underwent smoother fluctuations relative to the other two Latin American countries.

Though in absolute terms, Egypt's short-term commercial bank debt is not significant as compared to that of Argentina, Brazil or Mexico, Egypt's ratio of short-term debt over GNP has been historically comparable to that of large debtors like Mexico or Argentina. In fact, this ratio is even greater than that for Brazil. Egypt also experienced an initial rise and then a decline in short-term commercial bank financing from abroad, particularly after the 1982 debt crisis. However, for this country the changes are less dramatic than those of Argentina or Mexico.

The increasing importance of short-term debt in Turkey is not only visible in absolute terms but also as a percentage of its GNP. With the exception of 1987, short-

term debt in Turkey has consistently increased, rising from a 1-2% ratio between 1980-83 to a significant level of 6% by 1990, a magnitude comparable to that of the major LDC debtors.

Short-term borrowing has not played a major role in India in both absolute terms and relative to GNP, although the trend is upward sloping.²⁹ Kenya has significantly increased its reliance in short-term borrowing from commercial banks abroad, with short-term debt increasing from about 2 percent of GNP in 1982 to 8.7 percent of GNP in 1990.

IV. An Econometric Analysis of Short-term Lending : Formulation of Relevant Hypotheses

In an endeavor towards determining what factors influence short-term lending by commercial banks to LDCs and how it varies over time and across countries an econometric analysis of the available data on the selected countries was undertaken. The choice of the factors examined was made on the basis of discussions with officials in the Central Banks of several developing countries and with a group of commercial banks that extend such credits to these countries. Our discussions with relevant parties indicated the following hypotheses whose validity we test econometrically in this study:

- At first hand, the influence of this factor of the ratio of total debt outstanding and disbursed to Gross National Product (GNP) in determining a country's access to short-term trade lines is unclear. To the extent that this ratio

²⁹ This may have partly been as a result of a conscious policy of the government to discourage its residents from external short term borrowing.

provides a certain measure of the debt overhang, one would expect that the higher the ratio, the greater are the chances that a country's access to further loans, including short-term, will be curtailed. On the other hand, it is possible that the higher the debt of a country relative to the size of the economy, the greater the need to borrow from abroad. This includes short-term loans from abroad.

- The ratio of medium and long-term external debt to total external debt outstanding and disbursed can be taken as a measure of a country's debt overhang as well as an indicator of the exposure of the creditors of that country.³⁰ Countries with high levels of long-term outstanding debt are expected to receive less of both short-term or long-term financing in the future.
- It is expected that short-term borrowing by developing countries will fall as the volume weighted average maturity of the portfolio of uninsured loans from commercial banks increases, i.e. a higher average maturity of outstanding uninsured loans from commercial banks at any point in time implies that banks are willing to extend a larger share of medium and long-term loans (out of their total lending) to entities in the developing country in question due to an improved perception of the country risk associated with lending to that country. Higher average maturity of outstanding external loans implies a smaller share of short term debt in the total debt portfolio of the debtor country.

³⁰ As defined in the World Bank's "World Debt Tables", medium and long term external debt consists of debt that has an original maturity of greater than one year that is owed to non-residents and is repayable in foreign currency, goods or services. This data does not include transactions with the IMF, debt repayable in domestic currency or direct foreign investment.

- The ratio of commercial debt to total debt in a country is expected to have a negative impact on the availability of future loans. The greater the exposure of banks in a particular country (relative to its GNP), the less willing they would be, as a group, to lend to that country.
- An increasing ratio of investment to GNP in a country is expected to have a positive impact on the country's access to short-term credit. This ratio is an indication of a country's future growth. Countries with optimistic growth outlooks are expected to be in a better position as borrowers than those with low investment levels. However, this premise will be true on the assumption that the investment expenditure incurred today is for productive purposes and will, indeed, bear fruit in the future. A high investment to GNP ratio may also send a signal to creditors abroad of increased confidence on the part of domestic economic agents about the future performance of the economy.
- The ratio of debt service to exports is considered by most banks both an indicator of a country's credit-worthiness and possibility of repayment. Countries with high debt service to exports ratio are expected to be less likely to receive financing by banks. They are considered to be very vulnerable to changes in the volume or the terms of trade. A fall in exports or in international prices can severely affect their possibilities of repayment to banks. On the other hand, even if exports do not fall, many banks are expected to refuse to provide further credits to countries that have already reached a certain threshold of debt service payments which is regarded as being too burdensome for the country. However, the coefficient may also be

positive if the high debt service ratio is interpreted as actual payments that were made to creditors abroad. Even though this ratio is high, banks may be willing to extend more short term loans instead of long term loans as a way of reducing the risk of carrying bad loans on their books. ST loans provide banks with more flexibility than MLT loans. So, as long as the country is making debt service payments (represented by a high TDS/XGS ratio) the bank will prefer to give it a ST loan instead of a MLT loan. The distinction between actual debt service payments and contractual debt service payment is, therefore, crucial in this context.

- The level of international reserves in a country is considered an indicator of the short term liquidity position of a country. This factor is expected to have a positive effect on the availability of short-term loans to that country. However, increasing levels of international reserves may reduce the demand for external loans in the debtor country. Hence, the overall effect of this factor on the actual availability of short term external credit from abroad is uncertain.
- Officials in central banks and commercial banks perceive the cost of the credit lines to be a major component in both the supply and demand functions for short-term credits. However, it is almost impossible to gather accurate data on the "true" cost paid by borrowers for a short term line of credit. Most borrowers or lenders are not required to disclose the terms agreed and, even when some rates are quoted these are not representative of the "effective" rates paid by the borrowing countries to banks. In order to obtain an accurate estimate of the rates charged by banks for such loans we would need to have information on special fees and up front payments made by LDCs among

other changes related to these transactions. For the purposes of this study, the interest rate paid to private creditors published by the World Bank in the World Debt Tables under the heading of average terms of new commitments was taken as a proxy of the spreads paid on short-term loans. The relationship between volume and price is not *a priori* very clear. Conceptually, the demand for short-term loans is expected to fall as the price increases. However, it is observed that some countries, because of their excessive dependence on trade as a source of income, need to borrow even at the expense of paying very high spreads and other fees on these credits.

- The conventional notion that there is an intimate relationship between changes in the trade account of a country and the level of short-term borrowing was tested. The general belief on this matter is that the higher the trade deficit of a country the greater the amount of short-term trade related credit a country would acquire from banks abroad. In fact, since we are dealing with the total amount of short term loans rather than net short-term flows (inflows less outflows), absolute trade flows (rather than only the trade deficit) may be important.
- Finally, but crucial to this study is the hypothesis that short-term lending might vary across countries and over time. In some countries, short-term external borrowing may be curtailed as a deliberate policy of the government during period of scarce foreign exchange (e.g. the Government would ask domestic entities to borrow domestically from the nationalized banking system at a controlled rate of interest and, in turn, purchase foreign exchange to meet their import and export financing needs). It has also been known that the Governments of some countries, during times of tight domestic credit,

have consciously encouraged domestic entities to endeavor to finance their short term import needs through external borrowing rather than borrowing from the domestic banking system. This hypothesis was tested by means of a covariance model often used to account for country and time-specific effects using pooled cross-section and time series data. The basics of this model are explained in the following section.

V. Methodology of the Econometric Analysis of Short-term Debt

The Data

Maybe the most cumbersome obstacle to a thorough understanding of short-term finance is collecting reliable and detailed data. Because of the nature of trade financing from commercial banks to developing countries it is almost impossible to keep an accurate record of the flow of short-term credits to these countries. Most transactions involve only banks and exporters or/and importers in the trading nations and, usually, unless the recipient country enforces exchange controls, little or no disclosure is required by the governments of these countries. In particular for the period before 1982, when the rapidly escalating debt stocks were not considered a problem by the developing countries, almost no consistent data can be found.

However, some data is available from a number of international organizations which are standard sources for medium and long-term external indebtedness statistics. These include the BIS, OECD and the Debtor Reporting System of the World Bank. However, these sources contribute only partially to explain short-term trade financing. In most cases, the data reported as short-term

debt does not only include short-term trade lines from commercial banks but also bridge loans, accumulated arrears and inter-bank lines. A list and a description of the different sources that periodically report on estimates of short-term debt of LDC can be found in Annex 1.

Given the impossibility of finding accurate and consistent data on short-term credits from the debtor countries, and because most creditors' sources began reporting their estimates for short-term debt after 1982, we relied on the BIS data in the "Maturity and Sectoral Distribution" bulletins published since 1979. Two important considerations have to be kept in mind regarding the use of the BIS data on short term lending by banks to LDCs: (i) The raw data was extracted from the category of claims up to and including one year. However, because this data includes longer-term credits reaching maturity within twelve months of the reporting date, further calculations were required to obtain those claims with an original maturity of one year ³¹ and (ii) the BIS data includes inter-bank lines as a component of short term claims. (a separate breakdown of which was not available). Therefore, any conclusions drawn from this study should be treated with caution.

Model Specification

Two main models were tested and compared in our study of short-term credits. A pooled OLS regression for the period 1980-1990 and a Covariance Model for the same period. The pooled model assumes that the intercept and the slopes of the model are constant. The implication of using this model in our study would be

³¹ Short-term bank credits for time period (t) = bank claims of up to one year for time period (t) minus bank claims of up to one year in period (t-1).

to implicitly assume that time or country-specific characteristics do not affect the volume of short-term credit available to a country at any point in time.

To overcome this limitation of the pooled OLS model we estimated the covariance model on pooled cross section and time series data for the selected countries. In this model specification we included dummy variables which allow for the intercept term to vary over time and across country. Therefore, in this model we allow for intercepts to vary across time and across countries, but not the slope coefficients. This model can be written as follows:

$$Y_{it} = c + h_j X_{ijt} + \beta_2 W_{2t} + \beta_3 W_{3t} + \dots + \beta_N W_{NT} + \alpha_2 Z_{i2} + \alpha_3 Z_{i3} + \dots + \alpha_T Z_{iT} + e_{it}$$

where X_{ijt} is a vector of j independent variables ($j = 1 \dots k$) for the i th. country and ($i = 1 \dots N$).

h_j is a vector of regression coefficients ("slope" coefficients) for the j th. dependent variable.

$$W_{it} = \begin{cases} 1 & \text{for } i\text{th country } i = 2, \dots, N \\ 0 & \text{otherwise} \end{cases}$$

$$Z_{it} = \begin{cases} 1 & \text{for } t\text{th time period } t = 2, \dots, T \\ 0 & \text{otherwise} \end{cases}$$

In our study of short-term lending, dummy variables are included to account for all but one country and all but one year. The dummy variable coefficients measure the differences in the country and time intercepts with respect to the base

(Argentina 1980). Through the introduction of the country and year dummies to the pooled model it is implicitly being assumed that specific time periods and the country to which short term trade lines are being extended are crucial factors in explaining differences in the levels of short-term lending from commercial banks. If this assumption proves correct, adding the dummy variables will allow us to compare the access to short-term credits by different countries over time.

It is important to note that both the pooled OLS model and the covariance model assume that the slope coefficients of the explanatory variables (X_j s) are constant. In the context of our study, this will mean that the independent regressors will have the same impact on short-term lending regardless of the country or the year we are considering. If the slopes were to vary as well, each separate country regression would become a distinct model and pooling would be inappropriate.

In the econometric analysis conducted in this study, the simple pooled OLS specification and the covariance model were estimated using the same dependent variable and the independent variables. The dependent variable (STGNP) is our estimate for short-term credits (estimated from BIS data) expressed as a proportion of the Gross National Product, in order to account for the different sizes of the economies in our sample. The independent regressors which were included in the analyses on the basis of the hypotheses formulated in section IV are listed below:

EDTGNP: Ratio of total external debt over GNP.

COMMEDT: Ratio of commercial debt over total debt.

TDSXGS: Total debt service on long-term debt over exports of goods and services.

TDEFGNP: Ratio of trade deficit over GNP.

- AVMAT: Volume weighted average maturity of new commitments by private creditors abroad to the country in question during any given year.
- PRIVINT: Average interest rate charged by private creditors on new commitments.
- LDOEDT: Ratio of long term to total debt.
- RESEDT: International reserves to total external debt.
- INVGNP: Ratio of gross domestic investment to GNP.

In accordance with the hypotheses postulated in this paper, positive signs are expected for the coefficients of INVGNP and RESEDT if greater the growth prospects and the international liquidity of a country make it more likely for that country to have access to short-term financing from foreign banks. The coefficient of TDEFGNP is expected to be positive provided we verify the conventional wisdom that the higher the trade deficit of a country the more short-term lines a country needs and eventually receives. EDTGNP, TDSXGS, LDOEDT and COMMEDT are included in our regression as credit-worthiness indicators which attempt to serve as a measure of the debt overhang in a country. *A priori*, we expect the signs of the coefficient of these variables to be negative.

As for the expected sign of the coefficient of PRIVINT, we cannot provide a definite answer. The economic theory of Demand postulates that as the spreads on short-term credits increase, countries will look for alternative ways of financing their needs. However, it has also been suggested by some in the profession that because of the heavy dependence of developing countries on trade, LDCs are often compelled to agree to paying (especially imports of essential consumer goods and exports of primary products) the often usurious rates and fees on short-term lines imposed on them by commercial banks.

Apart from these independent variables, the covariance model will include a dummy for all but one of the countries (i.e. Argentina) and for all but one of the years (i.e. 1980). The choice of which country we assign as the "base" and which time period we select is immaterial. Any country or time period can be selected as long as the number of country dummies is one less than the total number of countries in our pooled sample and the number of time-specific dummies is one less than the total number of years in the time series for each country. A list of all the dummy variables and their description is found in appendix 1. *A priori*, we make no assumptions about the signs of each of these dummy coefficients. Inclusion of all these dummies allows us to ascertain whether the country concerned and the year in which the transaction occurs are factors which are taken into account when short-term lines of credit are provided by banks to LDCs.

Empirical Results

The empirical evidence on the determinants of short-term lending to developing countries supports our basic hypothesis that it does make sense to differentiate across countries and over time in order to understand the determinants of short-term commercial bank lending to LDC's. This conclusion was drawn after comparing the two alternative model specifications. The first regression we ran was the simple pooled OLS model for a sample of 77 observations including data for seven countries of our sample (Argentina, Brazil, Egypt, India, Kenya, Mexico and Turkey) for the period 1980-1990. The regression results are provided in Table 3 below.

Table 3. Simple Pooled OLS: Regression Results

Dependent Variable is STGNP

Number of observations: 77

VARIABLE	COEFFICIENT	STD. ERROR	T-STAT.	2-TAIL SIG.
C	0.1891287	0.0671656	2.8158557	0.006
EDTGNP	0.0011254	0.0001442	7.8022293	0.000
COMMEDT	0.0222728	0.0361849	0.6155266	0.540
TDSXGS	0.0009933	0.0004139	2.4001009	0.019
TDEFGNP	0.3315129	0.1278083	2.5938283	0.012
AVMAT	-0.0028155	0.0017710	-1.5897595	0.117
PRIVINT	0.0006803	0.0020220	0.3364552	0.738
LDOEDT	-0.3264417	0.0606173	-5.3852934	0.000
RESEDT	0.0012458	0.0006346	1.9631391	0.054
INVGNP	0.1993478	0.1127075	1.7687183	0.082
R-squared	0.698071	Mean of dependent	0.069534	
Adjusted R-squared	0.657514	S.D. of dependent	0.051448	
S.E. of regression	0.030109	Sum of squared resid	0.060738	
Durbin-Watson stat	0.915116	F-statistic	17.21184	
Log likelihood	165.8238			

At 5% level of significance, EDTGNP, TDSXGS, LDOEDT and TDEFGNP were found to be statistically significant determinants of short-term credits, while INVGNP and RESEDT were statistically significant at the 10% level of significance. The signs of the coefficients of INVGNP, TDEFGNP, LDOEDT and RESEDT are consistent with our *a priori* expectations. Specifically, an improvement in the level of domestic investment in a country and an increase in its international reserves will, indeed, favorably affect the country's access to short-term credits. On the other hand, high levels of the external indebtedness in a country will deter creditors from supplying further short-term loans to that country. The notion that there is an inherent positive relationship between a country's trade deficit and its level of

short-term borrowing was tested and confirmed. Signs of the coefficients of TDSXGS, RESED and EDTGNP was hypothesized to be uncertain. In all these cases, it seems as though an already highly indebted country will need and receive more short-term credits, so the positive influences are more significant than the negative influence.

The second model run was the covariance model. In this model, each country and each time period is characterized by a different intercept, incorporated in the regression by adding dummy variables. Table 4 shows the regression results.

At first sight, this covariance Model specification appears to improve the statistical fit of our estimation because the R^2 is considerably higher than that of the pooled OLS model. However, in order to confirm these suspicions the covariance model was tested against the pooled OLS model. The F test of the null hypothesis that the intercept terms across countries and over time, taken together, are equal was rejected at 5% level of significance (F-Statistic = 11.8, as shown in Table 4). Hence, it does matter that we account for cross-country and time differences in our econometric estimation procedures. Therefore, our hypothesis that time and country-specific elements determine different levels of short-term lending was confirmed. Consequently, the introduction of country and year dummies improves the explanatory power of our model.

From the group of independent regressors, only EDTGNP, INVGNP and TDEFGNP were found statistically at 5% level of significance. For all three of them the sign of the coefficient is positive.

Table 4: Covariance Model: Regression Results

Dependent Variable is STGNP

Number of observations: 77

VARIABLE	COEFFICIENT	STD. ERROR	T-STAT.	2-TAIL SIG.
C	0.0433326	0.0801966	0.5403298	0.591
EDTGNP	0.0008524	0.0002932	2.9074300	0.005
COMMEDT	-0.0339625	0.0529724	-0.6411357	0.524
TDSXGS	0.0007183	0.0004599	1.5617245	0.125
TDEFGNP	0.3716172	0.1477354	2.5154242	0.015
AVMAT	-0.0013094	0.0017494	-0.7484975	0.458
PRIVINT	-0.0009071	0.0025996	-0.3489547	0.729
LOODEDT	-0.0932386	0.0806346	-1.1563095	0.253
RESEDT	0.0003087	0.0007317	0.4218227	0.675
INVGNP	0.6573961	0.1466669	4.4822406	0.000
DUM81	0.0037928	0.0154048	0.2462078	0.807
DUM82	0.0055786	0.0165816	0.3364343	0.738
DUM83	0.0145232	0.0187528	0.7744532	0.442
DUM84	0.0078530	0.0180866	0.4341886	0.666
DUM85	0.0028386	0.0193293	0.1468554	0.884
DUM86	-0.0164111	0.0223325	-0.7348532	0.466
DUM87	-0.0111909	0.0220303	-0.5079765	0.614
DUM88	-0.0316909	0.0210233	-1.5074175	0.138
DUM89	-0.0237928	0.0206153	-1.1541321	0.254
DUM90	0.0004545	0.0199035	0.0228362	0.982
BRADUM	-0.0799306	0.0213005	-3.7525179	0.000
EGDUM	-0.1070232	0.0587851	-1.8205834	0.075
INDUM	-0.1074409	0.0338127	-3.1775345	0.003
KENDUM	-0.1261226	0.0316327	-3.9870909	0.000
MEXDUM	-0.0779694	0.0202368	-3.8528546	0.000
TURDUM	-0.0956971	0.0263030	-3.6382507	0.001
R-squared	0.852659	Mean of dependent	0.069534	
Adjusted R-squared	0.780433	S.D. of dependent	0.051448	
S.E. of regression	0.024108	Sum of squared resid	0.029640	
Durbin-Watson stat	1.278287	F-statistic	11.80546	
Log likelihood	193.4454			

Once again, we confirmed the hypothesis that countries with higher growth prospects and/or undergoing trade deficits will have priority in the access to short-term lines. For EDTGNP the positive influence outweighed negative influence. In fact, EDTGNP was found to be a very significant factor with a positive influence on short-term lending.

Table 5. Covariance Model without year dummies: Regression Results

Dependent Variable is STGNP

Number of observations: 77

VARIABLE	COEFFICIENT	STD. ERROR	T-STAT.	2-TAIL SIG.
C	0.1304054	0.0688763	1.8933256	0.063
EDTGNP	0.0004668	0.0002440	1.9129170	0.061
COMMEDT	-0.0077680	0.0479850	-0.1618836	0.872
TDSXGS	0.0007939	0.0003819	2.0788944	0.042
TDEFGNP	0.4824192	0.1264331	3.8156086	0.000
AVMAT	-0.0013276	0.0015733	-0.8438736	0.402
PRIVINT	0.0013663	0.0017279	0.7907069	0.432
LDODEDT	-0.2000780	0.0686304	-2.9152954	0.005
RESEDT	0.0002392	0.0006140	0.3895616	0.698
INVGNP	0.4834743	0.1298440	3.7235010	0.000
BRADUM	-0.0758908	0.0183867	-4.1274910	0.000
EGDUM	-0.0126060	0.0431709	-0.2920017	0.771
INDUM	-0.0806910	0.0277556	-2.9071948	0.005
KENDUM	-0.0863234	0.0242996	-3.5524641	0.001
MEXDUM	-0.0672377	0.0180400	-3.7271522	0.000
TURDUM	-0.0698611	0.0203640	-3.4306191	0.001
R-squared	0.814309	Mean of dependent	0.069534	
Adjusted R-squared	0.768647	S.D. of dependent	0.051448	
S.E. of regression	0.024746	Sum of squared resid	0.037355	
Durbin-Watson stat	1.366017	F-statistic	17.83347	
Log likelihood	184.5389			

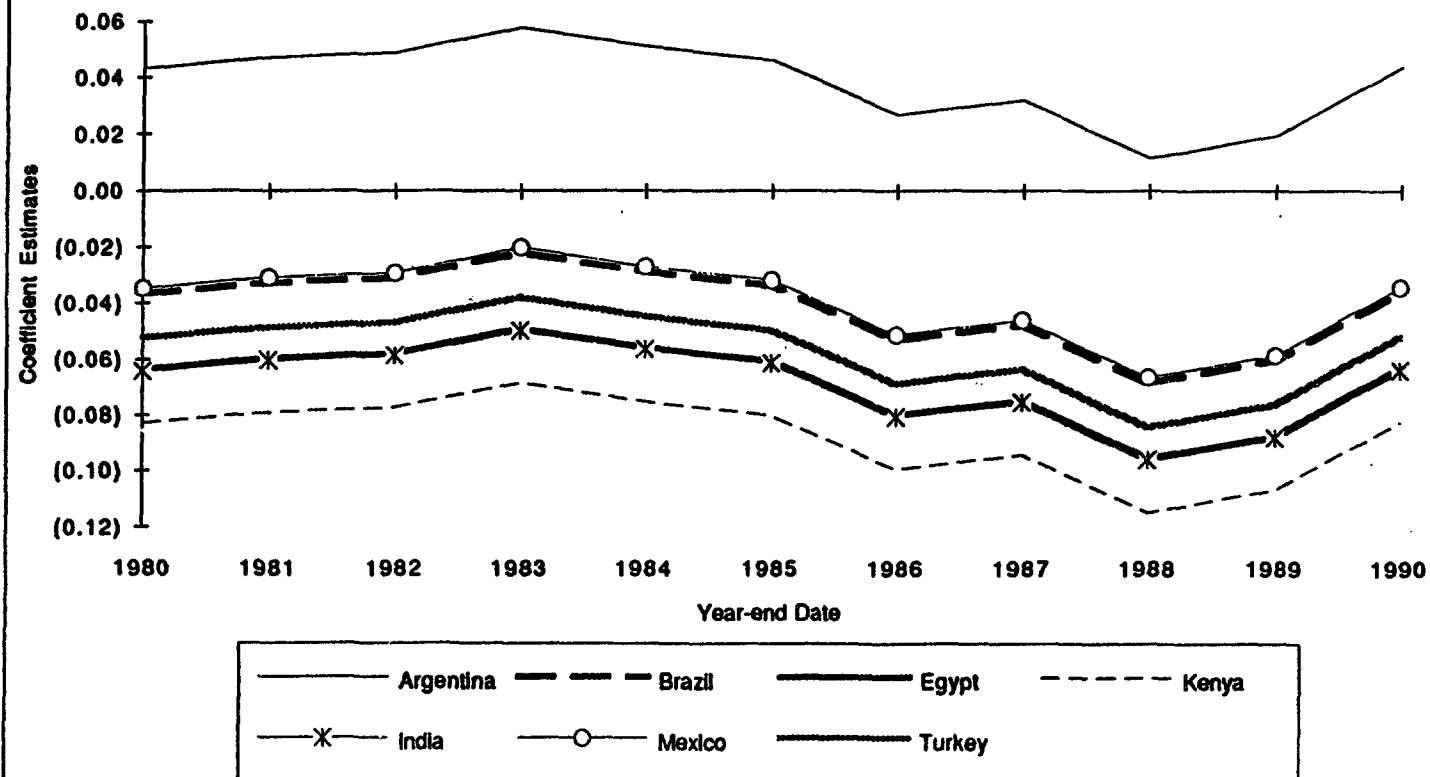
Regarding the dummies, several observations need to be made. Although we found that the covariance model (which includes the dummies for countries and years) improved the statistical fit of our regressions, we also found that all year dummies were not statistically significant at even the smallest levels of significance. Nevertheless, it is interesting to note that the dummy variables for 1986 to 1989 had negative coefficient estimates implying that less short-term credit was available to these countries (across the board) in the late 1980s. This observation coincides with the period of successive reschedulings and concerted new money packages in commercial bank debt restructurings that were undertaken in these countries

having protracted debt servicing difficulties. Debt and debt service reduction (DDSR) deals were introduced under the "Brady Initiative" in 1989 (with agreements in principle between Philippines, Mexico and Costa Rica and their respective commercial bank creditors). Hence, we ran a third model including only the dummy variables to account for country specific factors. Regression results are provided in Table 5.

We found the restrictions imposed to be significant. Therefore, the conclusion to which we arrive is that time or specific years alone do not affect the volume of short-term credits. On the other hand, we found that the dummy variables for the countries were statistically significant at very low levels of significance. Thus, we conclude that after we control for all the independent variables there is a country specific element which determines that one country receives more or less short-term credits than another. This can be illustrated in figure 2 which shows plots of the country-specific intercept terms (henceforth termed as "country-coefficients"). Because we have assumed that the impact of the independent variables themselves is the same across countries the country specific element in the provision of short term credit to LDCs by banks is explained by the different intercepts for each country and not by differences in the slopes.

It can be gleaned from figure 2 that, in our sample, Kenya appears to be the lowest in priority for short-term non-guaranteed lending by commercial banks. India and Egypt are the next lowest in preference and then Turkey. Mexico is higher in the bankers' performance ordering then Brazil when extending short-term loans. It is important to note that these intercept terms were calculated from the regressions with Argentina as the base (i.e. the constant term in the regression when

FIGURE 2: Country Coefficients from Regression Estimates



the values of all the "dummy" variables are assigned a value of zero represents the situation of Argentina in 1980).

The country specific element "Argentina" (illustrated by the positive intercept term, when all other dummy variables in the model take on the value of zero) has positively affected the country's access to short-term lending, while the rest of the countries in our sample show a negative impact on short-term lending. For Brazil and Mexico, the declaration of a moratorium on external debt service payments to banks (in 1982 and 1987 respectively) is often given as an explanation for the curtailment of voluntary lending (both short-term and long-term) to these countries. In both these cases, particularly in the case of Brazil, short-term credit lines have been maintained by banks only as components of the commercial bank debt restructuring "packages" that were negotiated between commercial banks and the debtor country. These components were not "voluntary" in nature. Clearly, involuntary lending by banks has resulted in a reduction of the short-term credits available to these countries.

At the same time, there are demand side factors which can also influence the volume of short-term credits from commercial banks that a country holds in its portfolio at a given point in time. For example, until recently Kenya and India have relied more on multilateral agencies and official bilateral creditors rather than on loans from commercial banks to fulfill their external financing needs. Therefore, a negative coefficient for a country-specific dummy variable can be partly explained by the lack of demand for short-term commercial bank credits from the debtor country at a point in time when it was able to obtain large amounts of official (or officially guaranteed) financing on concessional terms. The more difficult it becomes for a developing country to satisfy all its short term financing needs with insured export

credits from official sources, the higher will be its demand for commercial bank financing from abroad. Whether this demand will, indeed, be fulfilled will depend on the banks' willingness to supply short-term trade credits under suitable terms and the conditions prevailing in the debtor country at the time.

In sum, including country-specific dummies in the pooled OLS model increases the explanatory power of our study. The fact that the country specific dummies are statistically significant and different in value implies that there are other factors or events particular to a country that we have not individually identified in our models which account for the differences in the volume of short-term credits available to a country at any point in time. This in itself is a very important finding of this study. Indeed, the purpose of including a brief summary of the debt and growth history of the countries under investigation in this study (see section 1) was a way of acknowledging the possibility that the mere fact that each country is different from the other would have some effect on their entry into the market for short-term trade financing from financial institutions abroad.

VI. Conclusions and Recommendations

Short-term lending by commercial banks to developing countries has been an important and profitable area of their business activities. From the point of view of the LDC debtors, short term trade lines have provided, and will continue to be, the life-line for essential consumer goods, such as medicines and food supplies. Our discussions with relevant officials in developing countries has revealed that short-term credits from private sources will continue to be necessary, given that the official sources do not provide enough to LDCs for them to be able to meet all their trade related short term credit needs. In addition, the continued availability of short

term credits, even if they are extremely costly for the country, is an important consideration before any formal debt renegotiations are envisaged.

Although this subject is an important one, the literature on the subject is extremely sketchy and scarce. Only recently has reliable and consistent data become available for a few LDCs which has made it worthwhile to embark on a more rigorous analysis of the determinants of short term commercial bank lending to developing countries. In order to get a clearer picture of a country's external payments obligations at any point in time and to ensure the availability of pertinent information to policy makers within the LDC governments for them to devise an appropriate external debt management strategy for their country, it will be useful to record such disaggregated information on the country's short term commercial bank debt on a systematic and consistent basis. The quality of further research in the area would be greatly improved if such information is widely and periodically disseminated among all interested parties in both academic and non-academic circles.

In an endeavor to increase our understanding of the determinants of short term commercial bank lending to LDCs, an econometric analysis of pooled cross section and time series data for a sample of seven developing countries was carried out. We tested hypotheses that were formulated on the basis of numerous interviews with market participants and officials in the central banks of some developing countries. In this respect, we found that countries with higher growth prospects, represented by higher investment to GNP ratios, will receive greater amounts of short-term credits. At the same time, we confirmed the conventional notion that short-term credits are usually intended to finance countries with significant trade deficits. Our results indicated that higher levels of external

indebtedness (in terms of the ratio of total debt outstanding to GNP) will be coupled with higher levels of short-term external indebtedness from commercial banks (i.e. the ratio of short-term debt to GNP will be high). Finally, but not least important, we found that there are country specific elements which affect the volume of short-term lending available to a country. That is, even if all other things remain the same, some countries (e.g. Kenya) will find it more difficult to get easy access to short term financing from commercial banks than others (such as Mexico). A more detailed analysis of each country would have to be undertaken in order to determine what unique factors explain the observed differences across countries in their access to short-term credits. This is beyond the scope of this study. Factors such as the track record in the implementation of World Bank/IMF structural adjustment programs, the existence of domestic financial markets and orderly resolution of the country's external debt burden in conformity with a well thought out overall external debt management strategy will go a long way in explaining these observed differences. Finally, the robustness of the conclusions drawn from this study could be improved if a more detailed disaggregation of the data on short term commercial bank lending, e.g. into categories such as inter-bank lines, short term bridge loans and short term trade-related credits, were available for the econometric analysis of the determinants of short term lending by commercial banks to LDCs.

Further work in this area would also have to examine the creditor side of the market for short term financing to LDCs. This includes an in depth analysis of the prospects for future short term lending by financial institutions to developing countries, given the commercial banks' exposure levels; creditor country tax, regulatory and accounting considerations which banks have to conform with; and the possibilities for renewed growth in the industrialized countries.

Appendix 1

Sources and Definitions of Short-Term Debt data

BIS: The Maturity and Sectoral Distribution of International Bank Lending. This semiannual publication available since 1979 covers the claims of the most important international banks on developing countries. It presents two categorizations of debt. The distribution by sector distinguishes between claims on banks, non-banks and the public sector of the developing countries. The distribution by maturity distinguishes between loans up to and including one year, over one year up to two years and over two years. The category of claims up to one year includes lines with a residual instead of original maturity of one year, therefore longer-term credits reaching maturity within twelve months of the reporting date are included. Moreover, this source does not separate trade bills from other short-term assets such as working balances and inter-bank lines.

OECD: Financing and External Debt of Developing Countries. This annual publication available since 1982 collects data from the OECD creditor countries. It provides a breakdown of short-term debt between banks and export credits. The category of export credits include loans that are guaranteed by the creditor governments so that the lender carries no exposure risk. Bank lending in this survey refers only to lending which is not officially guaranteed by creditor countries. However, this category does not distinguish between trade and inter-bank lines.

OECD-BIS: External Debt Statistics. This annual publication available since 1982 is compiled with data reported by creditor banks to the BIS and creditor member countries to the OECD. A breakdown of short-term trade related credits by banks and non-banks entities is provided. This source, however, does not distinguish between short-term trade lines and other short-term financing as inter-bank lines.

World Bank: World Debt Tables

The principal sources of information for these annually published tables are the reports to the World Bank, through the Debtor Reporting System, from its member countries that have received either International Bank for Reconstruction and Development (IBRD) loans or International Development Association (IDA) credits. The short-term data is reported by the debtor countries or are estimates derived from creditor sources. The principal creditor sources are the semiannual series of commercial banks' claims on developing countries published by the BIS and OECD. The World Bank Debt Tables do not provide a distinction between trade lines and other short-term claims on developing countries.

Appendix

List of dummies included in the econometric analysis

BRADUM: Dummy for Brazil
EGDUM: Dummy for Egypt
INDUM: Dummy for India
KENDUM: Dummy for Kenya
MEXDUM: Dummy for Mexico
TURDUM: Dummy for Turkey

DUM81: Dummy for 1981
DUM82: Dummy for 1982
DUM 83: Dummy for 1983
DUM84: Dummy for 1984
DUM85: Dummy for 1985
DUM86: Dummy for 1986
DUM87: Dummy for 1987
DUM88: Dummy for 1988
DUM89: Dummy for 1989
DUM90: Dummy for 1990

Appendix

List of Variables included in the econometric analysis. Definitions and Sources.

Dependent Variable:

STGNP: Ratio of short-term debt over GNP. Estimated with data obtained from the the Maturity and Sectoral Distribution of International Bank Lending published by the Bank of International Settlements.

Independent Regressors:

AVMAT: Average maturity of new commitments. World Bank Debt Tables.

COMMEDT: Ratio of commercial debt over total debt. Estimated with data obtained from the World Bank Debt Tables.

EDTGNP: Ratio of total external debt over GNP. World Bank Debt Tables.

INVGNP: Ratio of gross domestic investment to GNP. Estimated with data obtained from the World Bank Debt Tables.

LDOEDT: Ratio of long-term to total debt. World Bank Debt Tables.

PRIVINT: Average interest rate charged by private creditors on new commitments. World Bank Debt Tables.

RESEDIT: Ratio of international reserves to total external debt. World Bank Debt Tables.

TDSXGS: Ratio of total debt service on long-term debt over exports and services. World Bank Debt Tables.

TDEFGNP: Ratio of trade deficit over GNP. Estimated with data obtained from the World Bank Debt Tables.

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